REMARKS

Careful consideration has been given by the applicant to the Examiner's comments and rejection of the claims, as set forth in the outstanding Office Action, and favorable reconsideration and allowance of the application, as amended, is earnestly solicited.

Concerning the Examiner's rejection of Claims 1-18 under 35 U.S.C. §112, second paragraph in failing to particularly point out and distinctly claim the subject matter of the present invention, appropriate amendatory action has been taken to correct the claim terminology, without in any manner introducing new matter.

In essence, concerning the term "divisions" in Claim 1 and the various dependent claims, this merely relates to a minor error in terminology, and in the specification this language is clearly identified as "lands", referring to the specification at Page 7, Lines 14-18; Page 8, Lines 4-13; and Page 13, Lines 9-15. Accordingly, appropriate corrections in terminology have been implemented throughout the claims to obviate that particular ground of rejection.

Similarly, throughout the claims, further amendatory action has been taken in conformance with the Examiner's requirements, concerning which the formal amendments implemented to the claims are considered to be self-explanatory, and primarily correct matters of grammatical terminology.

Furthermore, with regard to the Examiner's rejection of Claim 18, under either 35 U.S.C. §112, first paragraph, and the rejection of Claim 18 under 35 U.S.C. §102(b), as being anticipated by Jepsen, et al, U.S. Patent No. 5,947,003, appropriate amendatory action has been taken to clearly define terminology and limitations which obviate the formal grounds of rejection while concurrently distinguishing over Jepsen, et al.,

In particular, the language in Claim 18 has been amended wherein the expression "local fusion of a supplied material generated by means of a non-contact heat input" has been replaced by the term "local fusion of a supplied material, and wherein the local fusion is generated by means of a non-contact heat input and leveled so that a flat abutment face of the slide plane is obtained". This clarifies the aspect that the local fusion is generated through the intermediary of a non-contact heat input, as set forth in the specification at Page 10, Lines 1-11; and Page 14, Lines 4-8, and wherein there is obtained a flat abutment face of the slide plane, as also further described in the specification on Page 10, Lines 21-32. This particular language also clearly distinguishes over the cited art, as discussed in detail further on hereinbelow, wherein the amended Claims 1 and 18 are patentably novel inasmuch as none of the prior art publications disclose the formation of leveled lands of specific shapes on guide block blanks by means of fusion with non-contacting heat input.

Concerning the foregoing, as detailed in the Office Action, Claims 1-18 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Jepsen, et al. and further in view of Gnanamuthu.

Furthermore, Claims 2-4 have been rejected over the art are previously applied to Claim 1 and further in view of Japanese Application No. JP359219468 A; whereas Claims 5-12 have been rejected over the art applied to Claim 1, further in view of Le Caer, et al., U.S. Patent No. 4,595,429; and Claims 15-17 rejected under 35 U.S.C. §103(a) as being unpatentable over the art applied to Claim 1, further in view of Schweigler, et al., U.S. Publication No. 20030007709 A1.

Concerning the foregoing, upon further consideration of the art cited above, applicant respectfully submits that the claims clearly and patentably distinguish thereover, irrespective as to whether the cited publications are considered singly or in combination.

Accordingly, in traverse of the rejection of the claims in view of the art, applicant submits as follows:

Applicant considers Jepsen, et al. as representing the closest prior art, since Figures 1 and 2, respectively, show a slide shoe (6) merely describing structures (without reference numerals) as a sliding part on a surface, which is oriented towards and in parallel with a swash plate (5). In contrast to the AAPA, the slide shoe (6) and its structure shown in Jepsen, et al., is made of one integral part. In the AAPA, the sliding part (31) and the supporting shell (30) of the slide shoe (10) are constituted different parts. The AAPA does not show a material connection between the sliding part (31) and the supporting shell (30) of the slide shoe (10), whereas the other documents in the cited prior art do not show any sliding shoes or guide blocks.

Jepsen, et al. discloses a piston machine having a piston, which is arranged to move back and forth within a cylinder body. In order to achieve a lengthier service life of the machine, even if the hydraulic medium in use is not suitable for lubricating the bearing faces, the piston is provided at least on its outer surface sliding on the cylinder body, with a layer (11) of a friction-reducing plastics material. At the end of the piston there is provided a bearing face of an articulated joint, by means of which a slide shoe (6) is connected thereto, and wherein the friction-reducing layer (11) is extended onto the bearing face.

Jepsen, et al. also describes a friction-reducing coating or layer (11) of the swash plate (5) and the pressure plate (9) (Figure 2). However, Jepsen, et al. does not disclose any coating on the slide shoe (6). Jepsen, et al. also fails to disclose a formation of structures on the slide shoe. The structures (shown without any reference numerals) as broadly illustrated in the drawing figures, are not viewably distinguishable from the slide shoe (6) per se. Consequently, there is no suggestion for one of skill in the art to consider these structures to be of another material than

that of the slide shoe (6). Neither is there any motivation to consider that the structures are formed on the slide shoe (6) with additional material after fabrication of a slide shoe blank. No consideration can be made that the slide shoe (6) or a structural detail thereof could be constituted of another material than metal, for example, such as iron or steel. Jepsen, et al. does not suggest in any manner the forming of fixed structures on a slide shoe with an additional and/or alternative material in order to reduce friction. To the contrary, other parts of the piston machine are coated with plastic materials in order to reduce friction, whereby in order to reduce friction between the slide shoe (6) and the swash plate (5), only the swash plate (5) is provided with a coating or layer (11). Hereby, only a coating is shown in order to reduce any friction between the slide shoe (6) and the swash plate (5), whereby this has the disadvantage that a considerable amount of coating material is necessary to be able to reduce the friction between the slide shoe (6) and the swash plate (5). Another disadvantage resides in that only a limited selection of materials is disclosed for the slide shoe (6), as a result of which no optimal selection of material is possible to be able to reduce the friction between the slide shoe (6) and the swash plate (5). A further disadvantage is that no disclosure of any method for applying the structure on the slide shoe (6). Thus, no optimal structuring of the slide shoe (6) is possible in order to be able to reduce the friction between the slide shoe (6) and the swash plate (5).

Thus, it is the object of the present invention to provide a method for forming a structure on the surface of a guide block to be able to reduce any friction between the guide block and a surface interacting with the guide block, whereby only a small amount of material is used, an adequate material selection is possible, only a short processing time is required, and also to be capable of providing a guide block having fused structures on the surface of the guide block,

which reduces the friction between the guide block and a surface interacting with the guide block.

The foregoing object of the invention, which clearly distinguishes the claims over the art, especially as described in Jepsen, et al., is attained as follows:

According to the method as claimed in claim 1, lands are formed on a guide block blank, whereby a base surface is fabricated on a slide plane of the guide block blank. The material selected to form the lands is applied on said base surface, and wherein the lands can be formed with the use of different materials. Thus, a material selection can be implemented so as to meet specific requirements, for example, such as a reduction in friction. Since the lands, which are formed on the base surface, do not need to be of a large size, or to fill any cavities on the base surface so that only a small amount of material is necessary. The applied material is locally fused by means of local non-contact heat input, whereby there is no requirement of a pre-heating of the base surface resulting in only a need for short processing time. The local fusion process enables implementing of specific geometric shapes of the lands, whereby the specific shapes can be formed in order to save material and to reduce the friction between the lands and a surface interacting with the lands, for example, such as the slide surface of a swash plate. Relative movements between the guide block blank and a beam of heat input form the specific shapes, and the guide block blank and the heat input could both be either fixed or mobile, thus, facilitating many degrees of freedom. Finally, the abutment face of the fused material is leveled in order to produce a flat abutment face on the slide plane of the guide block, as a result of which any friction between the lands and a surface interacting with the lands is reduced still further.

Claim 18, as amended, claims a guide block with a slide plane on which lands are formed by means of local fusion of a supplied material by means of non-contact heat input. The lands

are leveled so that there is obtained a flat abutment face of the slide plane. Again, in this instance, the supplied material is selectable according to specific requirements. Due to the use of the non-contact heat input no pre-heating of the base surface is requested and there is a savings in processing time, while due to the leveling of the lands, any friction between the lands and a surface interacting with the lands is further reduced.

Even combining Jepsen, et al. with the secondary references would not lead to the present invention as set forth in the claims; concerning which applicants indicate the following arguments in traverse of the application of these publications:

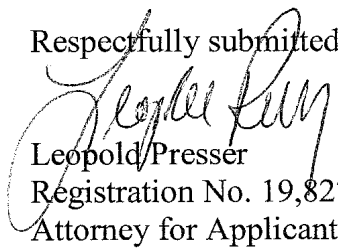
The AAPA discloses a slide shoe with a sliding part and a supporting shell as different parts constituting of the slide shoe (Abstract). However, no material connection between these parts is disclosed. Gnanamuthu shows a modification of surfaces of fabricated or semi-fabricated low melting reactive metal parts, particularly aluminum magnesium in basic or alloy forms, and more particularly of a purpose to produce changed physical or chemical properties on metal, e.g., hardened surfaces (Column 1, Lines 15-22). However, there is no disclosure of any leveling of the surface modifications, and accordingly, no leveling of the surface, which would reduce friction between the modified surface and an interacting surface. JP359219468 discloses the use of a laser beam, plasma arc, or an electron beam to form graphitized layer having good wear resistant characteristics (Abstract). These layers can be formed solely on sliding materials (Abstract). Schweigler provides for the use of plastic, ceramic, or a nonferrous metal as suitable materials for sliding bearings (Page 2, Paragraphs [0021] and [0022]). Le Caer discloses aluminum based alloys, which are produced by using known methods, such as in the form of wires, strips, bands, sheets, or powders in an amorphous state and/or in a microcristallized state (Column 3, Lines 11- 14). However, there is no disclosure of any leveling of the surface

modifications in order to reduce friction between the modified surface and an interacting surface, whereby these documents considered singly or in combination would not be applicable to the present claims.

In summation, the cited prior art does not show nor render obvious any fabrication of lands on a surface of a guide block, with the lands forming a material connection with the surface of the guide block, being then leveled, and in this manner forming the sliding part of the guide block. A leveling of lands on a surface of a guide block in order to reduce friction between the lands and a surface interacting with the lands is not disclosed or rendered obvious by means of the prior art.

Accordingly, predicated on the present amendments, which are being submitted by applicant, and the foregoing arguments, which clearly set forth the patentable distinctions of the claims over the art, irrespective as to whether the latter is considered singly or in combination, the application is deemed to be in condition for allowance, and the early and favorable reconsideration thereof by the Examiner and issuance of the Notice of Allowance is earnestly solicited. However, in the event that the Examiner has any queries concerning the instantly submitted Amendment, applicant's attorney respectfully requests that he be accorded the courtesy of possibly a telephone conference to discuss any matters in need of attention.

Respectfully submitted,



Leopold Presser
Registration No. 19,827
Attorney for Applicant

SCULLY, SCOTT, MURPHY & PRESSER, P.C.
400 Garden City Plaza – Suite 300
Garden City, New York 11530
(516) 742-4343

LP:jy